NPN SEMI-ANNUAL INDEX of Refining Technology Articles

January-June, 1944

Subject	Issue	Page
Chemical, Physical, and Testing Societies and Institutes, etc.		
Recent Advances in the Processing and Utilization of Plastics	Apr. 5	R-244
New Theories on Catalytic Cracking Presented at A.C.S. Meeting	May 3	R-320
Patents and Patent Office Publications		
Postwar Rights Secured in Neches Agreement	Mar. 1	R-126
Alien Patents Available to U. S. Industry Cover Petroleum Refining Processes	June 7	R-394
Tests of Lubricating Oils		
Asphaltization Tests for Lubricating Oil	Jan. 5	R- 26
Corrosion and Stability Test for Lubricating Oils		
Part 1	Mar. 1	R-176
Part 2	Apr. 5	R-224
Tests of Residuum and Fuel Oils		
Wide Variety of Compounds Studied as Additives for Diesel Fuels	Jan. 5	R- 30
Developments to Raise Ignition Qualities of High-Speed Diesel Fuels Explained	May 3	R-284
Miscellaneous Tests and Analyses		
Effect of Aniline Point of Oil and Aromatic Content of Gasoline on Behavior of Synthetic Rubbers	Feb. 2	R- 76
Mobilized Research	Feb. 2	R- 82
New Type Direct Displacement Device for Testing LPG Cylinders	Mar. 1	R-156
Use of the Mass Spectrometer in Routine Analysis of Refinery Gas Samples	Apr. 5	R-196
Infrared Spectroscopy New Analytical Tool for New Processes	May 3	R-274
Aniline Points of Hydrocarbons	May 3	R-297
Stability of Butadiene	June 7	R-384
Pipeline Transportation of Petroleum		
Army's Portable Pipeline	May 3	R-251
Manufacturer Receives Army Award for Record in Assembling Pipeline Units	May 3	R-257
Refinery Processes		
Plant 15—Anathema to the Axis	Jan. 5	R- 23
Refinery Processes for War Products	Feb. 2	R- 68
Development of the Hydrogen Fluoride Alkylation Process	Mar. 1	R-146
How to Prepare for 'Sour' Crude Processing	Apr. 5	R-185
New Theories on Catalytic Cracking Presented at A.C.S. Meeting	May 3	R-320
Desulfurizing		
Catalytic Desulfurization of Petroleum Stocks by Cobalt Molybdate Process	Feb. 2	R-102
Refining of Permian Basin High Sulfur Crudes	Mar. 1	R-163
Improved Refining of Sour Crudes by New Tannin Solutizer Process	Mar. 1	R-170
How to Prepare for 'Sour' Crude Processing	Apr. 5	R-185
Mercaptan Removal by Unisol Treating Effects Savings in Small Refinery	May 3	R-307
Refinery Equipment and Materials		
Welded Refinery Equipment	Jan. 5	R- 37
Welding Stainless Steels	Jan. 5	R- 42
"Contactor" is New Equipment for Alkylation Plants	Jan. 5	R- 50
Instrument Piping, Tubing and Fittings Redesigned to Overcome Wartime Shortages	Feb. 2	R- 61
Homemade Flashlight Battery Recharger Reduces Replacement Cost by 70%	Feb. 2	R- 94
Reclaiming Pumps by Metallizing	Mar. 1	R-159
Testing Ground for Fire Control Equipment Set Up by Refinery Proves Value	Apr. 5	R-191
Safeguarding from Faulty Welding in Installing Alloy Steel Liners	Apr. 5	R-193
Silencers for Diesel and Gas Engine Compressor Sets	Apr. 5	R-201
The Combustion Gas Turbine	May 3	R-308
Refinery Construction and Design		
Design of Anchor Bolts for Stacks and Towers	Jan. 5	R- 34
Planning Gas Compressor Stations for Long-Range Efficiency	Feb. 2	R- 87
Discussing Economic Design of Modern Pressure Vessels		
Article 1—Factors Effecting Cost of Tanks	May 3	R-282
Article 2—Shape of Heads	June 7	R-362
Refinery Operation and Control		
Minimizing Instrument Maintenance in Designing Aviation Gasoline Plants	Jan. 5	R- 3
Some Experience in Starting Up Recent Process Units	Jan. 5	R- 5
Training Instrument Men for Government Magnesium and Styrene Plants	Jan. 5	R- 7
Personnel Problems in Operation of an Instrument Department	Jan. 5	R- 10
Exhaust Steam from Compressors Used in Processing Operations	Apr. 5	R-195
Shortage of Plant Maintenance Men Threatens Aviation Gasoline Output	May 3	R-249
Gas Engines in Unusual Service in Process Water Supply System	May 3	R-295
Co-ordinated Maintenance Program Improves Units' On-Stream Time	June 7	R-329
Corrosion in Refinery Equipment		
Use of Alloys to Combat Corrosion from High Sulfur Crudes	Jan. 5	R- 20
Control Equipment Designed to Withstand HF Corrosion	Jan. 5	R- 51
Resisting Condenser Tube Corrosion	Feb. 2	R- 96
Refinery Corrosion Problems Reviewed	June 7	R-376
Uses of Clad Steels to Combat Corrosion	June 7	R-378
Use of Nickel Alloys to Resist Corrosion	June 7	R-381
Natural Gas and Gasoline		
Propane, Normal and Iso-Butane Recovered in Gas Treating Plant	Jan. 5	R- 16
Use of Natural Gas Components in Refinery Operations	Feb. 2	R- 64
When and Where to Build a Natural Gasoline Plant	May 3	R-314
How Will the New Processes Affect the Postwar Light Ends Situation	June 7	R-342
Manufacture of Gasolines		
An Informal Long-Range Forecast of Motor Gasoline Development	Feb. 2	R- 57
Factors Affecting the Antiknock Performance of Postwar Gasolines	Mar. 1	R-132
Latest Type Separator Delivers Gasoline 99.999% Water-Free	Apr. 5	R-232
High Flash or 'Safety' Aviation Fuels	May 3	R-270
Manufacture of Liquefied Petroleum Gas		
Progress of the Liquefied Petroleum Gas		

Subject	Issue	Page
Industry in 1943	Jan. 5	R- 11
New Type Direct Displacement Device for Testing LPG Cylinders	Mar. 1	R-156
Manufacture of Lubricants		
Solvent Dewaxing and Recrystallizing Units Included in New Lubricating Oil Refinery	May 3	R-265
Manufacture of Other Petroleum Products		
High Yield of Petroleum Butadiene Is Provided in Port Neches Plant	Mar. 1	R-121
Canada's Complete Rubber Plant	Mar. 1	R-128
Physical Properties of Synthetic Rubbers	Apr. 5	R-214
Recent Advances in the Processing and Utilization of Plastics	Apr. 5	R-244
Process Design for the Synthetic Rubber Plants	June 7	R-349
Butadiene by Thermal Cracking of Naphtha Included in California Rubber Project	June 7	R-366
Research in Petroleum Refining		
Principles Governing Catalyst Reactions Studied in Extensive Research Program	Jan. 5	R- 47
Vapor Pressures and Critical Properties of Organic Compounds (Article 1 in a Series)	May 3	R-258
Infrared Spectroscopy New Analytical Tool for New Processes	May 3	R-274
Thermal Properties of Hydrocarbons (Article 2 in a Series)	June 7	R-372
Utilization of Lubricating Oils and Greases		
Are Nine Weights or S.A.E. Grades of Motor Oils Justified?	Mar. 1	R-172
Methods of Compounding Barium Greases, Their Properties, Uses and Future	Apr. 5	R-254
Utilization of Other Petroleum Products		
Petroleum Solvent Naphthas	Apr. 5	R-188
Utilization of Synthetic Rubbers	Apr. 5	R-208
Recent Advances in the Processing and Utilization of Plastics	Apr. 5	R-244
Safety and Accident Prevention		
Every Man His Own Safety Engineer	Feb. 2	R-114
Testing Ground for Fire Control Equipment Set Up by Refinery Proves Value	Apr. 5	R-191
Revivification of "B" Solutions for Wet Foam Fire Extinguishing Systems	Apr. 5	R-240
Wartime Plant Security Program Wins Civilian Defense Award	May 3	R-326
Centralized Control Is Feature of Refinery Protective System	June 7	R-390
Economics of the Refining Industry		
Effect of Catalytic Cracking on the Postwar Supply of Motor Gasolines and Fuel Oils	June 7	R-334
How Will the New Processes Affect the Postwar Light Ends Situation?	June 7	R-342

Author Index

Author	Title	Issue	Page
Ball, J. M.	Physical Properties of Synthetic Rubbers	Apr. 5	R-214
Ball, John S.	Aniline Points of Hydrocarbons	May 3	R-297
Barnard, D. P.	An Informal Long-Range Forecast of Motor Gasoline Developments. (Also by Marschner, R. F.)	Feb. 2	R- 57
	How Will the New Processes Affect the Postwar Light Ends Situation? (Also by Forrester, J. H.)	June 7	R-342
Bergman, Donald J.	Minimizing Instrument Maintenance in Designing Aviation Gasoline Plants (Also by Gallagher, G. G.)	Jan. 5	R- 3
Bogen, J. S.	Developments to Raise Ignition Qualities of High-Speed Diesel Fuels Explained (Also by Wilson, G. C.)	May 3	R-284
Borus, Ben, et al	The Corrosion and Stability Test for Lubricating Oils		
	Part 1	Mar. 1	R-176
	Part 2	Apr. 5	R-224
Bosomworth, G. P.	Personnel Problems in Operation of an Instrument Department	Jan. 5	R- 10
Boultbee, A. H.	Use of Natural Gas Components in Refinery Operations	Feb. 2	R- 64
Bourne, R. B.	Silencers for Diesel and Gas Engine Compressor Sets	Apr. 5	R-201
Bradley, W. E. et al	Catalytic Desulfurization of Petroleum Stocks by Cobalt Molybdate Process	Feb. 2	R-102
Brummerstedt, E. F.	Design of Anchor Bolts for Stacks and Towers	Jan. 5	R- 34
	Discussing Economic Design of Modern Pressure Vessels. (Article 1—Factors Affecting Cost of Tanks)	May 3	R-282
	Economic Design of Pressure Vessels. (Article 2—Shape of Heads)	June 7	R-362
Byrns, A. C., et al	Catalytic Desulfurization of Petroleum Stocks by Cobalt Molybdate Process	Feb. 2	R-102
Cermak, Robert W.	Training Instrument Men for Government Magnesium and Styrene Plants	Jan. 5	R- 7
Cline, Edwin L.	Recent Advances in the Processing and Utilization of Plastics	Apr. 5	R-244
Conway, Martin J.	Uses of Clad Steels to Combat Corrosion	June 7	R-378
Deal, D. R.	Wartime Plant Security Program Wins Civilian Defense Award	May 3	R-326
Downey, Victor I.	Are Nine Weights or S.A.E. Grades of Motor Oils Justified?	Mar. 1	R-172
Ebner, Emil E.	Solvent Dewaxing and Recrystallizing Units Included in New Lubricating Oil Refinery (Also by Mertens, F. T.)	May 3	R-265
Elder, T. G.	Effect of Catalytic Cracking on the Postwar Supply of Motor Gasolines and Fuel Oils (Also by Moore, W. G.)	June 7	R-334
Fallon, J. F.	Thermal Properties of Hydrocarbons (Article 2 in a Series) (Also by Watson, K. M.)	June 7	R-372
Faust, J.	Asphaltization Tests for Lubricating Oil	Jan. 5	R- 26
Fischer, F. K.	The Combustion Gas Turbine. (Also by Meyer, C. A.)	May 3	R-308
Forrester, J. H.	How Will the New Processes Affect The Postwar Light Ends Situation? (Also by Barnard, D. P.)	June 7	R-342
Gallagher, G. G.	Minimizing Instrument Maintenance in Designing Aviation Gasoline Plants. (Also by Bergman, Donald J.)	Jan. 5	R- 3

Author	Title	Issue	Page
Gamson, B. W.	Vapor Pressures and Critical Properties of Organic Compounds (Article 1 in a Series). (Also by Watson, K. M.)	May 3	R-258
Gerhold, C. G. et al	The Development of the Hydrogen Fluoride Alkylation Process	Mar. 1	R-146
Holler, Arthur F.	Revivification of "B" Solution for Wet Foam Fire Extinguishing Systems	Apr. 5	R-240
Iverson, J. O. et al	The Development of the HF Alkylation Process	Mar. 1	R-146
Kopetz, G. E.	Process Design for the Synthetic Rubber Plants	June 7	R-349
La Croix, H. N.	Improved Refining of Sour Crudes by New Tannin Solutizer Process	Mar. 1	R-170
Larson, Elder C., et al	The Corrosion and Stability Test for Lubricating Oils. Part 1	Mar. 1	R-176
	Part 2	Apr. 5	R-224
Lee, M. W., et al	Catalytic Desulfurization of Petroleum Stocks by Cobalt Molybdate Process	Feb. 2	R-102
Love, Russell J.	Welded Refinery Equipment	Jan. 5	R- 37
Ludi, W. C.	Some Experiences in Starting Up Recent Process Units. (Also by Moore, H. F.)	Jan. 5	R- 5
Luger, K. E.	Safeguarding from Faulty Welding in Installing Alloy Steel Liners	Apr. 5	R-193
Maassen, G. C.	Physical Properties of Synthetic Rubbers. (Also by Ball, J. M.)	Apr. 5	R-214
Marschner, R. F.	An Informal Long-Range Forecast of Motor Gasoline Developments	Feb. 2	R- 57
Matheny, W. F.	When and Where to Build a Natural Gasoline Plant	May 3	R-314
McArdle, E. H.	Petroleum Solvent Naphthas	Apr. 5	R-188
McClain, Ross	Increasing Life of Cylinder Liners from 6 Weeks to 6 Years	Mar. 1	R-162
McLennan, L. W.	Methods of Compounding Barium Greases, Their Properties, Uses and Future	Apr. 5	R-234
Mertens, F. T.	Solvent Dewaxing and Recrystallizing Units Included in New Lubricating Oil Refinery. (Also by Ebner, E. E.)	May 3	R-265
Meyer, C. A.	The Combustion Gas Turbine. (Also by Fischer, F. K.)	May 3	R-308
Moore, H. F.	Some Experiences in Starting Up Recent Process Units. (Also by Ludi, W. C.)	Jan. 5	R- 5
Moore, W. G.	Effect of Catalytic Cracking on the Postwar Supply of Motor Gasolines and Fuel Oils. (Also by Elder, T. C.)	June 7	R-334
Moriarty, F. C.	Refining of Permian Basin High Sulfur Crudes	Mar. 1	R-163
	Mercaptan Removal by Unisol Treating Effects Savings in Small Refinery	May 3	R-307
Morton, B. B.	Use of Alloys to Combat Corrosion from High Sulfur Crudes	Jan. 5	R- 20
	Use of Nickel Alloys to Resist Corrosion	June 7	R-381
Morrell, Charles E., et al	The Stability of Butadiene	June 7	R-384
Nebeck, H. J. et al	Development of the HF Alkylation Process	Mar. 1	R-146
Newman, R. J. et al	Development of the HF Alkylation Process	Mar. 1	R-146
Oberfell, G. G.	Progress of the Liquefied Petroleum Gas Industry in 1943	Jan. 5	R- 11
Parker, F. D.	Refinery Processes for War Products. (Also by Ragatz, E. G.)	Feb. 2	R- 68
Parker, Ivy M.	Refinery Corrosion Problems Reviewed	June 7	R-376
Phillips, Howell L.	Propane, Normal and Iso-Butane Recovered in Gas Treating Plant	Jan. 5	R- 16
Ragatz, E. G.	Refinery Processes for War Products. (Also by Parker, F. D.)	Feb. 2	R- 68
Risk, T. H.	Factors Affecting the Antiknock Performance of Postwar Gasolines	Mar. 1	R-132
Robey, R. F., et al	The Stability of Butadiene	June 7	R-384
St. Clair, T. A.	New Type Direct Displacement Device For Testing LPG Cylinders	Mar. 1	R-156
Schaafsma, J. G.	Use of the Mass Spectrometer in Routine Analysis of Refinery Gas Samples	Apr. 5	R-196
Scherer, George F.	Control Equipment Designed to Withstand HF Corrosion	Jan. 5	R- 51
Spremulli, Gertrude H.	Effect of Aniline Point of Oil and Aromatic Content of Gasoline on Behavior of Synthetic Rubbers	Feb. 2	R- 76
Taylor, W. J.	Replacing Refinery Pump Rods Without Replacements	Mar. 1	R-159
Thiel, Bruno	Planning Gas Compressor Stations for Long-Range Efficiency	Feb. 2	R- 87
Torrance, P. M.	Synthetic Rubber Tires and Inner Tubes	Apr. 5	R-208
Van Winkle, Matthew	High Flash or 'Safety' Aviation Fuels	May 3	R-270
Veal, C. B.	Mobilized Research	Feb. 2	R- 82
Waters, George W., et al	The Corrosion and Stability Test for Lubricating Oils. Part 1	Mar. 1	R-176
	Part 2	Apr. 5	R-224
Watson, K. M.	Vapor Pressures and Critical Properties of Organic Compounds (Article 1 in a Series). (Also by Gamson, B. W.)	May 3	R-258
	Thermal Properties of Hydrocarbons (Article 2 in a Series). (Also by J. F. Fallon)	June 7	R-372
Webb, Ralph D.	Instrument Piping, Tubing and Fittings Redesigned to Overcome Wartime Shortages	Feb. 2	R- 61
Wiese, H. K., et al	The Stability of Butadiene	June 7	R-384
Wilson, G. C.	Developments to Raise Ignition Qualities of High-Speed Diesel Fuels Explained. (Also by Bogen, J. S.)	May 3	R-284

WIDENING HORIZONS

Views on Personnel, Management and Economic as Well as Technological Developments in Petroleum Refining and Natural Gas Processing: Comment from Readers Is Invited

Biddle Espouses the New Deal Program For Socializing Inventors' Rights

THE NEW DEAL still holds to its program for socializing inventors' rights, the exact opposite of the principle of the American patent system.

A letter from Attorney General Biddle, energetic exponent of wider government powers over business on all horizons, to Senator Gillette of Iowa gives the former's ideas on ownership and licensing of patents. The letter discusses the agreements between the oil companies and other parties and the Rubber Reserve Co. for the pooling of patents and technical information to provide means for the large volume manufacture of synthetic rubber in the war emergency.

Mr. Biddle's letter was in reply to an inquiry from the senator, who is chairman of a special Senate committee which has been investigating the use of farm and forestry products in making synthetic rubber. Senator Gillette had asked, among other points, whether the agreements had the approval of the Department of Justice.

After discussing at some length earlier statements from the Attorney General's Office to the effect that agreements made under the Emergency Act and faithfully carried out would not constitute a violation of the anti-trust laws, Mr. Biddle says:

"It is the view of this department that the agreements under consideration do tend to create a monopoly in the synthetic rubber industry to the extent that they provide for patent pooling between various companies and do not require licensing to future applicants. . . . . The Department has felt that some protection was afforded the public by the power given Defense Plant Corp. or the Federal Loan Administrator to direct that licenses be given to new applicants. This power, however, is not unqualified and after the war a refusal on the part of the participants in the patent pools to license new applicants may constitute a violation of the anti-trust laws. . . . . Your committee may wish to consider, however, whether it might not be wise to insure the continuance of the licensing of these patents."

This statement seems typical of the muddy thinking of the Department of Justice in matters relating to patent ownership and of the consistent espousal of principles inimical to our existing patent systems.

The Department of Justice always seems to think that what it is pleased to call a "pooling" of patents, which is really a broad cross-licensing arrangement, tends to promote monopoly, while actually the opposite is true. Any patent starts out by being a monopoly but the more widely it is cross-licensed or "pooled" the more competition comes into the picture, as has been demonstrated in all industry's history, and the less monopoly is involved.

In the case of the synthetic rubber patents, it was vital that all operators be licensed to use all new developments as promptly as possible and a general cross-licensing arrangement or pooling was the only possible answer. On the other hand, it is difficult to see why there should be compulsion on any company or individual inventor to license future patents that may come along after the end of the war. If we want to preserve the prime stimulus to research and development, the value of which has been so many times demonstrated in this wartime period, the companies which have waived their individual rights in the emergency should have the right to benefit from future improvements in processes and from the licensing of inventions.

While the agreements between the Rubber Reserve Co. and private concerns do not "require," they provide for licensing of new operators upon mutually acceptable terms and conditions not less favorable than those with other operators, during the life of the patents in at least some cases. The courts, as in the past, constitute a means for recourse for individual parties or the government in case of the unjustified withholding of licenses.

The New Deal's theory on inventors' rights also apparently differs widely with the present system on the ownership of inventions of employes. Attorney General Biddle suggests in his letter to Senator Gillette that his committee "may wish to consider a policy for the disposition of inventions developed in the operations of plants created at government expense."

Under the American patent system the rights of both employer and employe are equitably protected by court law. The principle has been upheld many times that where a man was hired to work on a definite project to the end of developing a new method or process, the rights to inventions in connection with that work belonged to the employer. Where the invention is incidental to the work for which the man was hired, ownership rests with the individual, with the employer insured the privilege of licensing.

In the case of direct government-operated plants or direct research projects, the government stands in the same position as any employer and its rights are now protected. Inventors' rights are also protected. In the case of inventions by employes in plants which, while financed by the government, are operated by oil or other private companies it would seem to be far fetched to claim the government had an interest in or control of inventions made by workers there.

To set up a right of the government to own or control the disposition of inventions made in government financed but privately operated war plants would be an opening door to socializing the rights of all inventors and would mean a revolutionary change in the American patent system.

Second Anniversary Issue

This issue of the Technical Section marks the second anniversary of the inauguration by NATIONAL PETROLEUM NEWS of a journal which provides within one cover once a month carefully selected technical papers and original articles of timely interest to refining technologists and plant operators.

This occasion provides an opportunity for its staff to express sincere appreciation to the many contributors and others who have given the benefit of their knowledge and experience to aid in charting its editorial program. By now some of the buoys have been set out which mark the channels where reader interest and attention flow with the deepest currents. Along this course of selected subjects we plan to move in coming months with even greater progress than in the first two years.